

## **REMARKS**

### **Introduction**

The present application has been carefully studied and amended in view of the outstanding Office action dated February 26, 2008, and reconsideration of the rejected claims is respectfully requested in view of the following comments.

A petition for a one-month extension of time accompanies this response together with the appropriate fee. Accordingly, the deadline for responding to the Office Action has been extended until June 26, 2008.

### ***Status of claims***

Claims 1 to 10 have been examined on the merits. Claims 1 to 10 have been rejected.

Claims 1 and 6 have been currently amended. Claims 9 and 10 have been cancelled.

Support for these amendments can be found in the specification as follows:

The minimum hydroxyl number of 30 mg/g of the alkyd resin **Ba** is taken from page 6, lines 23 and 24 of the specification (claims 1 and 6).

The condition for forming homogeneous mixtures from claim 1 has also been inserted into claim 6.

Proper use of the indefinite article has been made in claim 6.

No new matter has therefore been introduced, and entry of the amended claims is respectfully requested as these amended claims clearly put the application into better form for allowance or appeal.

## The Office Action

### *Rejection under 35 U. S. C. 112, second paragraph, and under 35 U.S.C. 101*

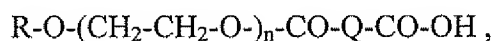
It is deemed that by virtue of deleting the rejected claims 9 and 10, this objection has been rendered moot, and withdrawal of this reason of rejection is respectfully requested.

### *Rejection under 35 U. S. C. § 103 (a)*

Claims 1 to 10 have been rejected under 35 U. S. C. § 103 (a) as being obvious over the Urbano reference, US 6,469,096.

Claim 1 has been rejected over the Urbano reference '096 as cited supra. It has been pointed out that the polyester B of this reference is an esterification product of a polyhydroxy component Ba, an alkoxy polyethylene glycol Bb, a cycloaliphatic dicarboxylic acid or anhydride Bc, and a fatty acid Bd. This is, of course, correct.

An alkoxy polyethylene glycol (referred to as "Bb" in the '096 reference, and as "Bba" in the present invention) is a monoether of a polyethylene glycol, having only one residual hydroxyl group. In the present invention, the monoether of a polyethylene glycol **Bba** and the dicarboxylic acid or anhydride **Bbb** are used in a ratio of the amounts of substance of from 0.95:1.05 to 1.05:0.95. This ensures that an adduct **Bb** is formed that is of the structure



where n is the degree of polymerisation of the polyethylene glycol, RO- is the alkoxy residue of the monoether of the said polyethylene glycol, and Q is the residue of the dicarboxylic acid after removal of the two carboxyl groups.

This monofunctional acid **Bb** is then esterified with the alkyd resin **Ba** which is hydroxy-functional, according to its hydroxyl number of at least 30 mg/g. This structure which is formed exclusively in the present invention has the effect that the polyoxyethylene segments are always

either chain-pending or at the chain end of the alkyd resin **B** formed from the esterification reaction of **Ba** and **Bb**, and that all of the cycloaliphatic dicarboxylic acid residues are bound to the monoether of a polyethylene glycol. Such a structure could not be formed exclusively, in the polyester B of the '096 reference from the educts Ba through Bd as mentioned hereinabove, as all reactants were present at the same time. At the same time, as in the reaction to synthesise the emulsifier **B**, the alkyd resin **Ba** used has to be chosen in a way that it is homogeneously miscible with the alkyd resin **A** which is to be emulsified, the combination of these two features constitutes the difference between the '096 reference, and the present invention.

As the Examiner has also pointed out, the *prima facie* case of obviousness could be rebutted if the results of the use of different emulsifiers leads to significantly improved results which could not have been expected.

Applicants respectfully submit that due to the different structure of the emulsifier as described supra, far higher gloss values have been obtained when paints based on alkyd resins using this emulsifier were applied to primed metal sheets. In this context, applicants refer to col. 8, lines 14 to 23, where the gloss of the paints according to the '096 reference, although markedly improved over the comparison (51 %), is 80 % at an observation angle of 20° (the value of "200" of course being a typo). Using the emulsifier of the present invention, a gloss value of greater than 90 % at the same observation angle of 20° has been achieved. As this improvement could not have been reasonably expected, it is deemed that unexpectedly good results have been obtained using the emulsifier with the special structure according to the present invention, and withdrawal of this reason of rejection is earnestly solicited.

It is deemed that the rejection of the dependent product claims is also rendered moot if it has been shown that the independent claim 1 is non-obvious over the '096 reference.

The difference in the process as claimed in claim 6 of the present invention, and the process as used in the '096 reference is that in the present invention, the emulsifier is made in a two-step reaction where in the first step, an adduct **Bb** of an alkoxy polyethylene glycol **BBa** and a cycloaliphatic dicarboxylic acid **Bbb** in a ratio of the amounts of substance of essentially 1:1 is made, which adduct **Bb** is then reacted in the second step with an alkyd resin **Ba** which is homogeneously miscible with the alkyd resin **A** which shall be emulsified.

This two-step reaction sequence provides an acid-functional hydrophilic agent **Bb** which is attached to an alkyd resin **Ba**. This alkyd resin **Ba** is so chosen that it is compatible (as evidenced by homogeneous miscibility) with the alkyd resin **A** which is to be emulsified.

In the process according to the '096 reference, all ingredients **Ba** through **Bd** are reacted together, the structure of the reaction products therefore being arbitrary.


As the product of the two-step reaction leads to markedly higher gloss of a paint film made by using the emulsified alkyd resin according to this invention, as compared to the paint film made by the emulsified alkyd resin of the '096 reference, it is deemed that selection of this special reaction sequence is not obvious over the '096 reference, in view of the unexpectedly good results of such different emulsifier made by a different process.

***Conclusion***

Based on the foregoing remarks it is believed that all pending claims are in condition for allowance. Such action is earnestly sought, and favorable reconsideration is therefore respectfully requested.

Dated: June 26, 2008

Respectfully submitted,

By 

Richard M. Beck

Registration No.: 22,580

CONNOLLY BOVE LODGE & HUTZ LLP

1007 North Orange Street

P. O. Box 2207

Wilmington, Delaware 19899-2207

(302) 658-9141

(302) 658-5614 (Fax)

Attorney for Applicant

619226